



Chemical and Environmental Measurement Information

Recra LabNet Philadelphia Analytical Report

Client: TNU-HANFORD B99-078

RFW #: 9909L129

SDG/SAF #: H0534/B99-078

W.O. #: 10985-001-001-9999-00

Date Received: 09-17-99

01-18-00 Date

DECEIVED

GC/MS VOLATILE

Four (4) soil samples were collected on 09-14-99.

The samples and their associated QC samples were analyzed according to criteria **EDMC** Recra OPs based on SW 846 Method 8260A for TCL Volatile target compounds on 09-23-99.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. The cooler temperature upon receipt has been recorded on the chain-of-custody.
- 2. The required holding time for analysis was met.
- 3. Non-target compounds were not detected in the samples.
- 4. All surrogate recoveries were within EPA QC limits.
- 5. Matrix spike analyses for SDG H0534 were performed on RFW# 9909L127, sample ID-B0WBR7.

6. The method blank contained the common laboratory contaminant Methylene Chloride and the target compound 2-Butanone at levels less than the CRQL.

J. Michael Taylor

Vice President

Philadelphia Analytical Laboratory

som\group\data\voa\tnu09129.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 12 pages.

GLOSSARY OF VOA DATA

DATA QUALIFIERS

U	=	Compound was analyzed for but not detected. The associated numerical value is the estimated
		sample quantitation limit which is included and corrected for dilution and percent moisture.

- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- **D** = Identifies all compounds identified in an analysis at a secondary dilution factor.
- 1 = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.

mmz\10-94\gloss.voa



2

GLOSSARY OF VOA DATA

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, Z = Indicates Spiked Compound.

mmz\10-94\gloss.voa



3

Recra LabNet - Lionville Laboratory

Volatiles by GC/MS, HSL List

Report Date: 10/22/99 04:55 RFW Batch Number: 9909L129 Client: TNU-HANFORD B99-078 Work Order: 10985001001 Page: 1a

	Cust ID:	BOWBR	0	BOWBR	1	BOWBR:	2	BOWBR	4	VBLKSQ			
Sample	RFW#:	00:	1	00:	2	003	3	004	4	99LVH366-N	Œ1		
Information	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL			
•	D.F.:	1.0	00	1.0	00	0.96		1.0	00	1.0	0		
	Units:	UG/1	KG	UG/I		UG/I		UG/I		UG/H			
<u> </u>						ŕ		·		·			
<u> </u>	Toluene-d8	98	8	109	 %	98	ક	98	*	98	ક		
	luorobenzene	89	*	101	*	91	₽	88	€	92	%		
	oroethane-d4	104	¥	115	윰	100	*	99	윰	103	용		
												========	:=fl
Chloromethane		11	U		U	10		10	U	10	U		
Bromomethane			U	_	U	10	U	10	U	10	U		
Vinyl Chloride		11	Ŭ	_	U		U	10	_	10	Ū		
Chloroethane		11	U		U	= -	U	10	Ü	10	U		
Methylene Chloride		12	В		В	7	В	9	В	3	J		
Acetone		11			U	10	Ŭ	10	Ū	10	Ū		
Carbon Disulfide		6	U	6	U	5	U	5	U	5	U		
1,1-Dichloroethene	- 	6	Ų	6	U	5	Ŭ	5	Ū	5	U		
1,1-Dichloroethane	,	6	Ü	6	Ū	5	U	5	U	5	U		
1,2-Dichloroethene (to		6	Ū.	6	U	5	U	5	U	5	U		
Chloroform	·	6	U	6	U	5	U	5	U	5	U		
1,2-Dichloroethane	·	6	U	6	U	5	U	5	U	5	U		
2-Butanone		6	J	6	J	4	J	5	J	10	IJ		
1,1,1-Trichloroethane		6	U	6	U	5	U	5	U	5	U		
Carbon Tetrachloride_		6	U	6	U	5	U	5	U	5	U		
${\tt Bromodichloromethane}_$		6	Ü	6	U	5	U	5	U	5	U		
1,2-Dichloropropane		6	U	6	U	5	U	5	U	5	U		
cis-1,3-Dichloroproper	ne	6	U	6	U	5	U	5	U	5	U		
Trichloroethene		6	U	6	Ū	5	U	5	U	5	U		
Dibromochloromethane_		6	U	6	U	5	Ü	5	U	5	U		
1,1,2-Trichloroethane	·	6	U	6	U	5	U	5	Ū	5	U		
Benzene		2	J	6	U	5	Ü	5	U	5	U		
Trans-1,3-Dichloroprop	ene	6	U	6	U	5	U	5	U	5	U		
Bromoform		6	U	6	U	5	U	5	U	5	U		
4-Methyl-2-pentanone		11	U	11	U	10	U	10	U	10	U		
2-Hexanone		11	U	11	U	10	U	10	U	3	J		
Tetrachloroethene		6	U	6	U	5	U	5	U	5	U		
1,1,2,2-Tetrachloroeth	iane	6	U	6	U	5	U	5	U	5	U		
Toluene		1	J	6	U	5	U	5	U	5	U		
. <u> </u>													

^{*=} Outside of EPA CLP QC limits.



RFW Batch Number: 9909	Cust ID:	B0WBR0		B0WBR1		B0WBR2		B0WBR4	501	Page: 11	<u>~</u>	
	RFW#:	001		002		003	l	004		99LVH366-1	MB1	
Chlorobenzene		6	U	6	U		Ū	5	U	5	U	
Ethylbenzene		6	U	6	U	5	U	5	U	5	U	İ
Styrene		6	U	6	U	5	U	5	U	5	Ų	ī
<pre>Xylene (total) *= Outside of EPA CLP (</pre>	OC limits.	6	U	6	U .	5	U	5	U	5	U	T

VOLATILE ORGANICS ANALYSIS SHEET TENTATIVELY IDENTIFIED COMPOUNDS

	١
BOWBRO	ĺ
	 1

Lab Name: Recra.LabNet Contract: 1	B0WBR0
Lab Code: Recra Case No.:	SAS No.: SDG No.:
Matrix: (soil/water) <u>SOIL</u>	Lab Sample ID: 9909L129-001
Sample wt/vol: 5.00 (g/mL) G	Lab File ID: h092308
Level: (low/med) <u>LOW</u>	Date Received: 09/17/99
% Moisture: not dec9	Date Analyzed: 09/23/99
Column: (pack/cap) <u>CAP</u>	Dilution Factor: 1.00
_	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
			=======================================	=====
1. 76131	ETHANE, 1,1,2-TRICHLORO-1,2,	9.081	10	NJ
		İ		

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS SHEET TENTATIVELY IDENTIFIED COMPOUNDS

١		 	
i	DOMED 3		
ļ	B0WBR1		
ļ			

Lab Name: Recra.LabNet Contract: 10985001001

Lab	Code:	Recra	Case	No.:		SAS	No.:	SDG No.:	
-----	-------	-------	------	------	--	-----	------	----------	--

Matrix: (soil/water) SOIL Lab Sample ID: 9909L129-002

Sample wt/vol: 5.00 (g/mL) G Lab File ID: h092309

Level: (low/med) LOW Date Received: 09/17/99

% Moisture: not dec. ____7 Date Analyzed: 09/23/99

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
		======	==========	=====
1. 76131	ETHANE, 1,1,2-TRICHLORO-1,2,	9.080	10	NJ
		Í		ii

1 E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS SHEET TENTATIVELY IDENTIFIED COMPOUNDS

I	
B0WBR2	
DUMDKZ	-
i	

Lab Namo	∋:	Recra	.LabNet
----------	----	-------	---------

Contract: <u>10985001001</u>

Lab	Code:	Recra	Case No.:	SA	S No.:	SDG No.:
-----	-------	-------	-----------	----	--------	----------

Matrix: (soil/water) SOIL Lab Sample ID: 9909L129-003

Sample wt/vol: <u>5.20</u> (g/mL) <u>G</u> Lab File ID: <u>h092310</u>

Level: (low/med) LOW Date Received: 09/17/99

% Moisture: not dec. 3 Date Analyzed: 09/23/99

Column: (pack/cap) CAP Dilution Factor: 0.962

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=======================================				
1. 76131	ETHANE, 1,1,2-TRICHLORO-1,2,	9.070	10	NJ
			Ì	į

VOLATILE ORGANICS ANALYSIS SHEET TENTATIVELY IDENTIFIED COMPOUNDS

1	
1	
DOMESTIAL STATE	
BUMBRE	
i	
BOWBR4	

Lab Name: Recra.LabNet Contract: 10985001001

Lab	Code:	Recra	Case No.:	_ SAS No.: _	SDG No.:
-----	-------	-------	-----------	--------------	----------

Matrix: (soil/water) SOIL Lab Sample ID: 9909L129-004

Sample wt/vol: $\underline{5.00}$ (g/mL) \underline{G} Lab File ID: h092311

Level: (low/med) LOW Date Received: 09/17/99

% Moisture: not dec. 2 Date Analyzed: 09/23/99

Column: (pack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:

Number TICs found: 1 (ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
-					====
1	1. 76131	ETHANE, 1,1,2-TRICHLORO-1,2,	9.070	20	NJ
1			İ		ii

Recra LabNet - Lionville Laboratory VOA ANALYTICAL DATA PACKAGE FOR TNU-HANFORD B99-078

DATE RECEIVED: 09/17/99 RFW LOT # :9909L129

CLIENT ID	RFW #	MTX PRE	P # COLLECTIO	N EXTR/PREP	ANALYSIS
					· ———
BOWBRO	001	S 99LV	H366 09/14/99	N/A	09/23/99
B0WBR1	002	S 99LV	H366 09/14/99	N/A	09/23/99
B0WBR2	003	S 99LV	H366 09/14/99	N/A	09/23/99
BOWBR4	004	S 99LV	H366 09/14/99	N/A	09/23/99
LAB QC:					
					
VBLKSQ	MB1	S 99LV	7H366 N/A	N/A	09/23/99

Jul 33.99

PECRA LabNet Use Only Custody Transfer Recomplete PROBLIZE FIELD PERSONNEL: COMPLETE									-ab '	Wc are	rk as	Re	equ (8)	les per per	t Page unl Hab	1,	of!	_	ſ		5 [REC .abN	RA let
Client TNU HANFORD BO99-078					Refrige			1	(2			Γ		6	-				—				
Fot Final Proj. Sampling Date XX9 18 199						Llquid																	
Project # 10985-001-001-9999-00					#/Type	Container	Solid	1AG	IAG			1		IA	5				1				
Project Contact/Phone #					Volume		Liquid	ļ								<u> </u>			<u> </u>		<u>.</u>		
RECRA Proje	ct Mana	ager _AT							Solid	60	29	-		1	 	50	<u>a</u>	 			1		
ac spec		Del Ada	<u> </u>	30	day		Preserv	ratives		<u> </u>		ANIC		<u></u>	 	-	IORG	 	├—				
QC Apoc Date Rec'd	9/17	199	Date Due	10/1	7/99		ANALYSES REQUESTED			V O	BNA AN	P B	E	Q.HJ.IM		Metal	S S						, Age
MATRIX		<u> </u>			Me	atrix		T					12	1.9	RECRA		et Use	Only	<u> </u>	1		1	<u> </u>
CODES: S - Soil SE - Sediment SO - Solid SL - Sludge	Lab ID		Client (D/Descr	iption	Chi	OC osen ✓)	Matrix	Date Collected	Time Collected	44220	OZZSH ODRO	1				New York	10,100	15F0 110H30	Ha! OgeB	COL	6.65.74 6.65.74		
W - Water O - Oil	001	BOW	BRO				3	9-14-99	1214	1	1	X	/	7		7	X	X	X	X	X		-
A - Air DS - Drum	002		11	<u></u>			1		1300	1		1	×	~		7	1						
Solids DL - Drum	003		12						1340	1	1	V		X		1							
Liquids L. EP/TCLP	004	-	14	!				I	15/0	1	}			<u></u>			1		=	سلم	4-		. :
Leachate WI - Wipe				1			T				<u> </u>		<u> </u>		pths.								1
X - Other								<u> </u>				<u></u>			Y),	_		<u> </u>	<u> </u>				·
T T T T T																		ļ	 		<u> </u>		<u>.</u>
] · 	 		<u></u>				ļ			 	 					
				<u>. </u>						L		<u> </u>				Д	 	 _	<u> </u>	<u> </u>	<u> </u>		
					<u> </u>	<u> </u>	<u> </u>	<u> </u>		L.				<u> </u>		ᆚᇎ	<u> </u>			<u> </u>			<u> </u>
Special Instruct		•				DATE/	REVISION	NS: () = <i>(15</i>	Ba	od	. Ph	DI	5	0	1a. B	,					se Only		
saf#	Ba	9-078	•				1001	سر را		<i>J-</i>	70	معمد ارادا	1	n D (8,7	7 9	Sa <mark>mples</mark> 1) Shipp	were:	. or	1)		gn Out	
100	•					$\frac{1}{a}$	met () = 03, Ba, Cd, Cs, Ph, Se, ag, 1 2 Cw, ni, V-2n, Hg, 1CR6					. 0.00	Hand Delivered Package					_	-				
$\frac{q_1 z_3}{q_1}$								3/41 3 tests con added per client coc 4 06050 259 propanol 4 ethanol						- Airbill See Selow				 Unbroken on Outer Package () or N 					
COMPOSITE							4. 06(5027) pri				1-propanol 4 ethanol)	2) Ambient or Ohilled 3) Received in Good			3) Present on Sample (7) or N				
COMPOSITE WASTE 9/23/94- no matrix QC required						5					_ · . · ·	X591	123/99	_ •	Condition	ە (<i>9</i>) ە	r N	4)	Unbroke	en on			
							6	<u>K</u>	M	in matrix ac				•	4) Labels Indicate Properly Preserved				Sample (2) or N COC Record Present				
Relinquished		Heceived	Date	Time	Relinqui: by	shed		Received by	0	Date Time		18				_	(Y) or N 5) Received Within					ple Rec	it .
P by	-	W. O	72 /	21/16			OP	GINAL				\dashv	COC	Recor	bels and d? Yor (o) Hecen Holding	Times		Co	oler ,	(Y) or	N
F. 24 EP	<u> </u>	Fleur	7-17-99	0. 47			_				_	\dashv	NOT		دسره بد	سي	· 7)	00 0	r N	Te	mp	7	.C
1			<i>/</i>	1	i		水上河	RITTE	:N		L		74	<u>رن</u>	7952	12	<u> </u>						